

ON SOME RELATIONSHIPS IN THE FLORAS OF TRANSCAUCASIA, ANATOLIA AND IRAN—I

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There are several indications in the literature (Grossheim, 1948; Walter, 1956; Gabrielian, 1961; Hedge, 1961) concerning the existence of floristic relationships between Iran, Anatolia and Transcaucasia. The mono- and oligo-typic genera of Umbelliferae are of particular interest in this respect. A critical review of these genera suggests that the number of species hitherto described as endemic for Transcaucasia should be somewhat reduced.

1. *Actinolema macrolema* Boiss., Fl. Orient. 2 : 831 (1872).

Syn.: *A. macrolema* f. *woronowii* Tamamsch. in Feddes Repert. 38: 169 (1935).

TURKEY. A4 Ankara: Kalecik, in monte Kyrkkys-dagh, 1000 m, *Bornmüller* 14119 (LE, E). A5 Kastamonu: Tosya ad Kawak Chesme, *Sintenis* 4146 (LE, E). B2 Uşak: Moisson à Uşak, 910 m, vi & vii 1851, *Balansa* (LE). B4 Çankiri: ad Kışil-Irmak, *Sintenis* 1125 (LE). B7 Erzincan: Szanduk, *Sintenis* 2547 (LE, BRNM.) B8 Gümüşane/Erzurum: inter Baiburt et Erzurum, 1800 m, *Huet* (sub. *A. eryngioides*—LE). C3 Isparta: ad Egridir, vi 1845, *Heldreich* (E).

TRANSCAUCASIA. Armenia: Prov. Yerevan prope Avdallar: 30 vi 1924, *Tamamschian*; 6 iii 1926, *Gambarian*; inter Shor-bulakh et Avdallar, 17 vi 1931, *Malejev & Tamamschian*; inter Wochcabert et Shor-bulakh, 23 vi 1933, *Tamamschian* (ERE, LE).

As I have already pointed out (1933), the presence of *A. eryngioides* Fenzl in the flora of the U.S.S.R. is dubious. My own (1933) and Bobrov's indication (Fl. URSS 16: 72, 1950) of the occurrence of this species in Nakhichevan is probably based on a misunderstanding. In the Leningrad General Herbarium (LE) I found a herbarium sheet from "Negram-Dorosham-Nakhichevan" labelled by Woronow as *A. macrolema*. This sheet contained specimens of both *A. macrolema* and *A. eryngioides*. After Woronow, no one has ever found *A. eryngioides*, although this interesting locality was thoroughly explored first by Grossheim and later by the botanists of Armenia, Azerbaijan and Leningrad. As for the other species, *A. macrolema*, its frequent occurrence in fields of cereals in the environs of Yerevan suggests that it spreads by man's agency and that it may have been introduced with *Triticum* or *Hordeum* seeds brought by immigrants from Turkey.

2. *Grammosciadium daucoides* DC., Collect. Mém. 5: 62 (1829).

Syn.: *G. szovitsii* Boiss. in Ann. Sc. Nat. Ser. 3, 2: 67 (1844).

G. aucheri Boiss., Fl. Orient. 2: 899 (1872).

TURKEY. A8 Gümüşane: ad Berdak prope Baiburt, 22 vii 1862, *Bourgeau* (W). A9 Kars: prope Promeschutochni (olim), 6 vii 1911, *Roop* (LE); prope

Karakurt, vii 1912 *Lonaczewski* (LE); Kağızman, prope Novo-Nikoloevko (olim) 7 vi 1913, *Woronow* (LE); Sarakamış, 24 vi 1916, *Saposnikow* (TBI). B6 Malatya: Kangel to Hekimhan, 1300 m, *Stainton & Henderson* 5387 (E). B7 Malatya/Erzincan: Kainardagh, inter Egin et Arabkir, *Sintenis* 872 (sub *G. macrodon*). Erzincan: Egin, Jailabaschi, *Sintenis* 3505 (sub *G. aucheri* subsp. *pauciradiatum*). B9 Ağrı: Burnbulak, 13 v 1916, *Schischkin* (LE). Bitlis: Resadiye Kotum, *Davis* 22374b (E). C7 Urfa/Diyarbakir: M. Karacadag, 10 vi 1841, *Kotschy* (W).

TRANSCAUCASIA. Guriel, (sub *Carum inodorum*) *Szowitz* (LE). Armenia: supra Gölaissor, 1 vii 1936, *Tamamschian* (ERE); A'agez (Aragaz): Piragan, 27 vii 1932, *Magakian* (ERE); prope Kosche-dara, ad Emek-Maidan, 1950 m, 30 viii 1932, *E. & N. Busch* (ERE). Daralaghez: inter Isti-su et Karmrashen, 9 viii 1933, *Araratian & Takhtakjan* (ERE). Karabach: Bitschenach, 8 vii 1895, *Lomakin* (TBI); ad Ak-karavansarai, 13 vii 1829, *Szowitz* (LE); in pratis montis altiorum ad Ak-karavansarai versus Koschadara, 13 vii 1829, *Szowitz* (LE); Buzhekan in via ad M. Akhamghan, 21 v 1942, *Davtian* (ERE). Azerbaijan: Nakhichevan-Schachbuz, Bitschenach, 16 vi 1947, *Grossheim et al.* (LE) Nakhichevan: in pratis alpinis, prope Bitschenach, 23 vi 1952, *Tzvelew & Cherepanow* (LE). Surmalu, prope Djuvalnu, 9 vi 1913, *Woronow* (LE).

SYRIA. M. Kurd Dag, 1200–1500 m, v 1907, *Haradjian* (W).

3. *Caropodium platycarpum* (Boiss. & Hausskn.) Schischk. in Not. Syst. Herb. Hort. Petrop. 4: 30 (1923).

Syn.: *Grammosciadium platycarpum* Boiss. & Hausskn., Fl. Orient. 2: 901 (1872).

C. meoides Stapf & Wettst. in Denk. Akad. Wiss. Wien Math. Nat. 51: 317 (1886).

Stenodiptera platycarpa (Boiss. & Hausskn.) K.-Pol. in Journ. Russe Bot. 1, 2: 13 (1915).

TURKEY. B8 Erzincan: Tercan to Aşkale, 1850 m, *Davis* 29316 (E); inter Erzurum et Erzincan, 85 km WSW Erzurum ad viam versus Tercan, *Rechinger* 15125 (E,W). Erzurum: between Ilica and Tercan, 1900 m, *Davis* 30895 (E). B9 Bitlis: Bitlis to Tatvan, 1600 m, *Davis* 23375 (E). C6 Maras: Berit Dag: 1830 m, ann. 1865, *Haussknecht* (type-G); bare shale slopes, *Balls* 1090 (E).

TRANSCAUCASIA. Karabach: M. Takaly prope Bitschenach, 10 vii 1895, *Lomakin* (TBI); *ibidem*, vii 1932, *Prilipko* (LE); *ibidem*, 23 vi 1957, *Tzvelew & Cherepanow* (LE). Nakhichevan, Schachbuz, prope Kju-Kju: 30 vi 1934, *Gurwitsch* (LE); *ibidem*, in loco Tschuchur-jurt, 24 v 1936, *Gadzhiew* (ERE, BAK); *ibidem*, 5 vi 1939, *Shevljakow* (BAK); *ibidem*, 12 vii 1954, *Denisova & Tamamschian*, *Kasumow & Aliew* (LE); *ibidem*, 3 viii 1959, *Maukus & Sverdlova* (ERE). Nakhichevan: circa Ordubad, M. Schich-Jurdu, 1050 m, 22 vi 1929, *Schelkovnikov & Kara-Murza* (ERE); prope Nasyrvaz, 16 vi 1933, *Prilipko* (LE). Prov. Zangezur, Dastun: 23 vii 1929, *Schelkovnikov & Kara-Murza* (LE, ERE); *ibidem*, 21 vii 1954, *Denisova & Tamamschian* (LE). Armenia: d. Megry ad occidentem supra Agarak in silvis clavis (*Quercus iberica* et *Juniperus polycarpus*), 1400–1600 m, 8 vi 1934, *Karjagin* (LE, W); inter Megry et Liskvas,

4 vii 1929, *Schelkovnikow & Kara-Murza* (ERE); Daralaghes, prope Gortun, 11 x 1959, *Gabrielian* (f. *microcarpa*—ERE).

IRAN. Luristan, in M. Alvand: *Pichler* 5936 (W); *ibidem*, prope Gendjahame, 19 v 1882, *Polak* (W). Persia: 1847, *Buhse* 613 (G); in quercetorum supra Pendjavin, Awiheng, 1500–2750 m, 1864, *Hausknecht* (G, W). Hamadan: in Gentschnahme-thale bei Hamadan, v 1882, *Pichler* (G, W). Elburs: in m. Elburs prope Passgala, *Kotschy* 289 (G, LE); Ujton Dag prope Passgala ad urbem Teheran, *Kotschy* 289 (W); jugi Elbursensis occid. in alpinis Ladd et Dosdere montium Totschal, 26–2700 m, *Bornmüller* 7131 (G, W, LE, E); Descht, inter Negry et Girdyk, *Schelkovnikow & Schiptschinsky* (LE); Ab-Ali, 2400–2900 m, 9–10 v 1956 *Schmid* 5633 (W).

IRAQ. Kurdistan: d. Sulaimaniya, in ditone pagi Penjwin, 1588 m, 19 vi 1957, *Rechinger* (G, W); d. Erbil, Haji Omran, 1700 m, *Rechinger* 11310 (W, E).

It was shown by Stapf and Wettstein (1886) and also by Schischkin that *Grammosciadium* sensu Boissier naturally falls into two separate genera—*Grammosciadium* DC. and *Caropodium* Stapf and Wettstein*. These genera differ distinctly not only in their external fruit morphology—not winged and laterally compressed in *Grammosciadium*, and winged along the lateral ribs and compressed dorsally in *Caropodium*—but also by their internal fruit structure, suggesting that Drude (1898) was perhaps justified in placing these genera in different tribes. In *C. platycarpum*, the sheaths of the cauline leaves have stipuliform scales at their bases which indicate its affinity to *Carum carvi* L. The suggestion of Schischkin (Fl. URSS 16: 125, 1950) that “possibly it might be more correct to name *Caropodium platycarpum* from Transcaucasia as *C. meoides*, since the Cataonian, Iranian and Transcaucasian specimens are doubtfully identical” cannot be accepted. Comparison of the authentic specimens of Boissier and of Stapf and Wettstein shows that these specimens are quite identical (cf. Bornmüller, 1906, 260). Therefore the name *C. platycarpum* should be used for the Turkish, Iranian and Transcaucasian plants.

4. *Caropodium pterocarpum* (Boiss.) Schischk. var. *schischkinii* Vinogr. & Tamamsch. var. nov.

Differt a typo: mericarpia costis lateralibus latissime alatis, alis corpore longitudine aequalibus latitudine multo latioribus valde transverse undulatis, habitu humili, caule ramosiore.

TURKEY. B9 Ağrı: Bajasetskyi Sandjak, in districtu Sandjak in declivibus stepposi, 1 vii 1916, *Schischkin* (LE).

The indication of the occurrence in the U.S.S.R. of a second species of the genus, *C. armenum* (Bordz.) Schischk. (Fl. URSS 16: 124, 1950), is erroneous. This species (syn. *Stenodiptera armena* Bordz.) is identical with *C. pterocarpum* (Boiss.) Schischk. (*Grammosciadium pterocarpum* Boiss.) and at present is known only from Turkey (Kars, M. Sohangelug), but it is very possible that it will be found in the adjacent region of Russian Armenia (Leninakan, Artik, M. Alagez). One specimen of Schischkin's collection from Turkey differs from all the Turkish and Iranian material of *C. pterocarpum* that we have seen in its broader, much undulated, winged, lateral fruit-ribs, not tapering at apex

* The revision of these two genera was accomplished in the herbarium with the participation of Vera Vinogradova, assistant in the Botanical Institute, Leningrad.

(in typical *C. pterocarpum* they are much narrower at the apex than at the base) and by the more branched stems.

Although this is probably a new species, we designate this "*specimen unicum*" as a variety of *C. pterocarpum*.

5. *Lisaea heterocarpa* (DC.) Boiss., Fl. Orient. 2: 1088 (1872).

Syn.: *Turgenia heterocarpa* DC., Prodr. 4: 218 (1830).

L. grandiflora Boiss. in Ann. Sc. Nat. Ser. 3, 2: 54 (1844).

TURKEY. B9 Erzurum: prope Aşkale, 6 vi 1916, Saposhnikow (LE). Muş: prope Malazgirt, 12 vi 1916, Schischkin (LE).

TRANSCAUCASIA. Armenia: d. Kotaik, in via inter Gjarny-Wochcabert-Ackbash, 8 vii 1954, Tamamschian & Denisova (LE, ERE); prope Beijuk-vedy, 6 vii 1932, Grossheim & Isaev (LE). D. Yerevan: prope Nor-Aresch, 28 vi 1950, Takhtadjan & Cherepanow (LE); prope Yerevan, 30 viii 1932, E. & N. Busch (LE). Nakhichevan: in faucibus fl. Arax inter Tasa-Kend et Kizil-vank, Woronow 14586 (LE); inter Ordubad et Soilamania, Woronow 14587 (LE).

IRAN. Azerbaijan: d. Khoi, Pere, Szovits 404 (sub *Turgenia heterocarpa* Isotype! —LE, G). Gilan: prope Karavansarai Mulli-Ali, Gadd 186 (LE).

6. *Lisaea heterocarpa* (DC.) Boiss. var. *syriaca* (Boiss.) Post, Flora of Syria, Palestine and Sinai, ed 1, 376 (1896).

Syn.: *L. syriaca* Boiss. in Ann. Sc. Nat. Ser. 3, 2: 55 (1844).

TURKEY. C7 Urfa: Urfa, 1865, Haussknecht (LE), Sintenish 814 (LE, E).

TRANSCAUCASIA. Nakhichevan: d. Schach-buz prope Karababa, 9 vi 1934, Gurvitsch (LE, BAK); prope Demartschi, 16 vi 1934, Prilipko (LE).

IRAN. Azerbaijan: Szowitz 410 (LE sub *Turgenia*).

SYRIA. Aleppo, 1846, Boissier (LE).

LEBANON. prope Baalbek, 1150 m, F. Bornmüller 11802 (LE, E).

L. syriaca Boiss. which occurs in the same general Iranian, Syrian and Transcaucasian region as *L. heterocarpa* is a delicate plant and differs from the latter only in its smaller fruits and slender single stems. Boissier himself was scarcely able to distinguish between the two species (as can be seen from some herbarium specimens) since in their distribution they are not clearly separated. For the present, I agree with the conclusion reached by Post (1896) that *L. syriaca* is a variant of *L. heterocarpa*. If *L. strigosa* (Banks & Sol.) Eig (Journ. Bot. 75: 189, 1937) is synonymous with *L. heterocarpa* var. *syriaca*, as Dinsmore suggested (Post, Fl. Syria, Palestine ed. 2, 573, 1932), *L. strigosa* would have to replace *L. heterocarpa* as the valid name for the species.

7. *Lisaea papyracea* Boiss. in Ann. Sc. Nat. Ser. 3, 2: 56 (1844).

Syn.: *L. syriaca* auct. non Boiss.—Grossh., Fl. Kavkaza 3: 137 (1932) pro parte.

L. armena Schischk. in Referat. Nauch. Issl. Rab. Akad. Nauk SSSR Biol. 1945, 10 (1947); Fl. URSS 16: 178 (1950).

TURKEY. B7 Erzincan: Szanduk, *Sintenis* 2564 (LE). Mus: Malazgirt, 12 vi 1916, *Schischkin* (LE). C2 Denizli: in cultis planitis Cariensis elatae ad meridiem Cadmi Gehra ad Denizli, vi 1842, *Boissier*.

TRANSCAUCASIA. Armenia: prope Yerevan, Wochcabert, 25 vi 1924, *Tamamschian* (ERE); Yerevan, prope Schor-bulach, 20 vi 1936, *Transhel* (LE); Yerevan inter Avdallar et Schor-Bulach, 14 vi 1947, *Tamamschian* (LE); Yerevan-Kotaik, inter Djerwesch et Wochcabert, 27 vi 1954, *Denisova* & *Tamamschian* (LE).

Although I have not seen the type specimen of *L. papyracea*, on the basis of the original description and examination of the sheet of *L. papyracea* collected by Sintenis somewhere near the "locus classicus", I failed to detect any difference between *L. papyracea* and *L. armena*. The variation in leaf-pubescentia and the size of the fruit wings does not support specific separation. Therefore, *L. armena* should be considered as a synonym of *L. papyracea*.

Both *L. heterocarpa* and *L. papyracea* (and similarly *Actinolema macrolema*) grow in or near cereal fields which explains their relatively wide distribution.

8. *Smyrniopsis aucheri* Boiss. in Ann. Sc. Nat. Ser. 3, 2: 72 (1844).

Syn.: *S. aucheri* var. *involutrata* Tamamsch. & Fedorov in Feddes Repert. 42: 304 (1937).

S. armena Schischk. in Referat. Nauch. Issl. Rab. Akad. Nauk SSSR Biol. 1945, 10 (1947); Fl. URSS 16: 222 (1950).

TURKEY. B9 Muş: ad radices australes Bingöll montis ad Gumgum in districtu Wardo, *Kotschy* 378 (G, LE); Kerkele frequens per valle a pago Koweg usque in regiones subalpinis, 1500–2100 m, *Kotschy* 378 (G). C8 Diyarbakir: Diyarbakir, *Noe* 247 (G). In Kurdistan, v 1849, *Noe* 218 (G, LE). Assyria, in monte Kalkou, *Aucher* 3689 (type—G).

TRANSCAUCASIA. Armenia: Scharuro-Daralaghez, M. Selim, *Novopokrovskiy* 2515, 2516 (ERE); Daralaghez, prope Koduch-vank, 15 viii 1931, *Karjagin* & *Safieva* (LE, BAK). Daralaghez, M. Teke-Dol-duran, *Araratian* & *Takhtajan* 25154, 25157 (LE, ERE). Daralaghez, in M. Selim, *Takhtajan* 29972, 29852, 29852–4 (ERE). Daralaghez, in M. Selim prope Karavan-saraj: 14 viii 1944, *Aslanian* (sub *Prangos ferulacea*—ERE); 17 vii 1954, *Tamamschian* & *Denisova* (LE).

IRAQ. Sulaimaniya: In graminosis Pir Omar Gudrun (Pira Magrun), 900 m, *Hausknecht* 511 (G).

IRAN. Kurdistan: Kuh-Galu et Sawers, *Hausknecht* (G). Persia australis: in M. Perezend, *Aucher* 4591 (G).

From the supplement to *Flora Orientalis* (271: 1888) we know that the second species, *S. syriaca* of section *Eusmyrniopsis*, originally described without fruits, later proved to belong to the genus *Opopanax*. I described in 1937 *S. aucheri* var. *involutrata* from Daralaghez, and in 1947, Schischkin described from the same locality the new species *S. armena*. Having examined the authentic specimens of Boissier, I have decided that *S. aucheri* and *S. armena* are identical. The differences in the characters of these species adduced by Schischkin do not prove to be justified upon a thorough examination: the size of the fruits depends on their position in the umbels, (lateral or central) and the presence of the

bracts and bracteoles depends of the developmental stage. The indication that the species is annual is erroneous. Boissier (1872) assumed *S. aucheri* to be a biennial or perennial plant. Living specimens I have seen in their natural habitat covering the slopes of the Selim Pass attain a height of 1.5–2.5 m. Their stems are 2–5 cm in diameter and the rhizome is very thick with a much branched root system. Boissier and Schischkin both had at their disposal only detached branches of this large umbelliferous plant.

Rechinger (1952) having at his disposal only a specimen without fruit made a tentative description of a new species of this genus, viz. *S. behboudiana*. Unfortunately I have not been able to examine any material of this species but from the description of its habit, leaves and flowers, it might prove to be *S. cachroides* which grows in the same region. In the course of a thorough, detailed comparison of the fruits of *S. aucheri* and *S. cachroides* I have observed (1945) a striking difference both in morphology and internal structure of the fruits of these two species and suggested that *S. cachroides* should be distinguished as a separate genus (Tamamschian 1962).

Thus, considering all the above described facts, the genus *Smyrniopsis* is regarded as monotypic and growing in eastern Anatolia, the northernmost extremity of Iraq, the western part of Iran and the southern part of Transcaucasia.

9. *Stenotaenia macrocarpa* Freyn & Sint. in Öst. Bot. Zeit. 42: 165 (1892).

Syn.: *Heracleum daralaghezicum* Takht. in Adnot. ad Ind. sem. Hort. Erev. editum (1940).

Pentataenium daralaghezicum (Takht.) Tamamsch. in Bull. Arm. Akad. Sc. 3–4: 113, (1942).

S. daralaghezica (Takht.) Schischk., Fl. URSS 17: 260 (1950).

TURKEY. A7 Gümüşane: ad Istavros, in herbis, *Sintenis* 1662 (BRNM-Type, JE, LE, W.) B7 Erzincan: Sipikor dagh, *Sintenis* 3327 (BRNM, LE). B9 Ağrı: Sandzhak, ad fl. Arax, 27 kil. supra Jagan in declivibus schistosis, 1916, *Sapozhnikow & Schischkin* (LE).

TRANSCAUCASIA. Armenia: Daralaghez supra Sally, 18 viii 1939, *Takhtajan & Fedorov* (sub *Heracleum* LE, ERE); Sally, in graminosis in faucibus, 22 viii 1939, *Takhtajan* (ERE); ad pedem jugi Selim, 29 vii 1939, *Fedorov* (ERE, LE); supra Akhkend, in frutices, 29 vii 1940, *Takhtajan* (ERE, LE); ad pedem M. Gözal-dara Akhkend, 29 viii 1940, *Fedorov* (LE); in jugis M. Selim, 14 vii 1951, coll. ignota no. 384; Daralaghez, prope Karavan-Saraj, 17 viii 1954, *Tamamschian & Denisova* (LE); prope Kuch, 18 viii 1954, *Tamamschian & Denisova* (LE).

According to Mandenova (1959) the genus *Stenotaenia* comprises 7 species. In future, when more complete collections are studied, this number will probably have to be reduced. Bornmüller (1906 p. 771) assumes *S. haussknechtii* Boiss. to be a somewhat modified alpine form of *S. nudicaulis* Boiss. Despite this view, it is much more closely allied to *S. tordylioides* Boiss. (the species that may be regarded as the generic type), as can be inferred both from the character of its lateral fruit-ribs and from the number of leaflets. At the same time, Bornmüller's species *S. elbursensis*, collected and described without mature fruits, is very similar to *S. nudicaulis* Boiss. as has been earlier pointed out by Parsa (1948).

I have not seen the original specimen of *S. elbursensis*, but on the basis of the original description and examination of a photograph of the holotype received from Berlin there is little doubt that it is synonymous with *S. nudicaulis* Boiss. which was also described from "Persia borealis".

S. sintenisii was described by Freyn (Öst. Bot. Zeit. 44:102, 1894) from northern Anatolia (Tosya). Freyn's type specimen is defoliated and has shed the mature fruits. It gave the impression of a depressed form and upon more detailed examination it proved to be identical with *S. macrocarpa*. Although I have examined the type specimens of all the six species mentioned in the literature, it is difficult to arrive at any decisive conclusion, owing to the scantiness of herbarium specimens and their not sufficiently precise descriptions, except for *S. macrocarpa*. Inaccuracies in the diagnoses of Boissier and Freyn were repeated in the description of this genus and its species by Mandenova (1950, 1959). In Boissier's description of *S. nudicaulis* the petals are described as "yellow", whereas in fact they are pinkish-pale yellow; the number of vittae on the commissure is indicated as "4", while actually their number varies, and furthermore their number may be unequal on the right and on the left side of commissure, e.g. 2 on one side and 3 on the other; they may be continuous or interrupted. The same is observed in *S. haussknechtii*, where there are 2 vittae on one side of the commissure and 2 or 4 on the other. In *S. macrocarpa* (incl. *S. daralaghezica*) the petals are not red as described by Mandenova, but are purplish or purple-pinkish outside and paler inside; the number of dorsal vittae is not 3 but usually 4-5 (although occasionally it may be 2, 3, 4 or 6). The shape and size of the mericarps also varied. In the course of examination of 120-130 mericarps from Russian Armenia, it was observed that only 75% of them had exactly 5 dorsal vittae; in other cases their number was 2, 3, or 4. The number of the commissural ducts also varied from 2 to 6. In all the other characters both these species—*macrocarpa* and *daralaghezica*—are perfectly similar.

Apparently the specimen collected in Turkey, on the label of which is written by Boissier "*Stenotaenia* sp., Akdagh, inter Adiaman et Malatia, 5000 ft 12 ix 35" (Coll. *Aucher*) and below probably written by Bornmüller: "*lag bei haussknechtii* gehört aber keinerfalls darin"—should also be assigned to *S. macrocarpa*, judging from its detached mericarps, by the fragment of the upper part of the stem and broken unequal umbels.

Drude (1897) treated *Stenotaenia* as a subgenus of *Malabaila*. Bentham & Hooker (1867) incorporated it into *Heracleum*. In my opinion, such species as *S. tordylioides* and *S. haussknechtii* (if they should be regarded as separate species) in fact gravitate rather towards *Pastinaca* more than to *Malabaila*, judging by the character of their leaves and by their flat fruit-ribs and yellow flowers. As for *S. macrocarpa* (including *S. daralaghezica*) and *S. nudicaulis-elbursensis*, these species are very peculiar and distinctly differ from the above-mentioned species (as has been correctly pointed out by Freyn for *S. macrocarpa*), and from all other genera of *Pastinaceae*.

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REFERENCES

- BENTHAM, G. & HOOKER, J. (1867). *Genera Plantarum* 1, 922.
BORNMÜLLER, J. (1905). *Beih. Bot. Centralb.* 19, 2: 258–265.
— (1906). *Bull. Herb. Boiss. Ser. 2*, 6 (9): 765–772.
DRUDE, O. (1897). Engler-Prantl, *Die natürl. Pflanzenfam.* 3, 8, 240.
GABRIELIAN, E. (1961). *Notes Roy. Bot. Gard. Edinb.* 23: 483–496.
GROSSHEIM, A. (1948). The vegetation of the Caucasus, 4–163.
HEDGE, I. (1961). *Arb. Univ. Bergen, Math-Naturv. serie* 7.
MANDENOVA, I. (1959). Materials for systematics of tribe Pastinaceae.
Trudy Bot. Inst. Acad. Nauk Grus. SSR. 20, 3–54.
MATHIAS, M. & L. CONSTANCE (1942). *Bull. Torr. Bot. Club* 69, 244–248.
— (1950). *Contribution from Texas Research Foundation* I, no 1, 23.
— (1959). *Bull. Torr. Bot. Club* 86: 374–382.
PARSA, A. (1948). *Flore de l'Iran*, 2, 680–870.
POST, G. (1896). *Flora of Syria, Palestine and Sinai*, Ed. 1, 327–376.
RECHINGER, K. H. (fil.), 1952. *Öst. Akad. Wiss. Wien*, 12: 240–242.
STAPP, O. (1886). *Denk. Akad. Wiss. Wien, Math. Nat.* 51: 317 (1886).
TAMAMSCHIAN, S. (1933). *Acta Inst. Bot. Acad. Sc. URSS*, ser. 1, 1, 157–159.
— (1945). *Bull. Acad. Sc. SSR. Arm.* v–vi, 47–62. (Yerevan).
— (1962). *Bot. Zhurn.* 47, 1: 144–154.
WALTER, H. (1956). Vegetationsgliederung Anatoliens.—*Flora oder Allg. Bot. Zeit.* 143, 2: 295–326.